

**CyDAS:** For visualizing simplex and complex chromosome aberrations

- Cydas was created in the late 1980s with funding from the German Research Foundation as a free software to help resolve ISCN nomenclature errors that occur during cytogenetic data mining and statistical analyses. Dr. Harald Rieder and his team created the simplified computer readable cytogenetic nomenclature (SCCN) to help simplify information generated about complex aberrations from these statistical analyses, which laid the foundation for CyDAS.
- This resource provides you a visual representation of various chromosomal rearrangements including translocations and derivative chromosomes in a karyotype. Banding resolutions are for the 400, 550, and 850 band levels. Other components of the website include a karyotype analysis software ([Online ISCN Analysis](#)) that analyzes a karyotype and provides information about rearrangements, clones, ploidy level, the presence of markers, double minutes, rings, and sex chromosomes.

To visualize a case karyogram based on the karyotype - [Drawing a Karyogram Online](#)

- 1) Type the karyotype into the box provided, the default banding resolution is '400 bands', change if appropriate then, click the Draw button. **Note:** You can type in the karyotype with or without the period (.) denoting a subband and the system automatically adjusts to insert the period.

## Drawing a Karyogram Online

Deutsche Version

The software creates an image showing the chromosomes (both normal and rearranged) for an ISCN karyotype.

Enter the karyotype described by an ISCN formula in the text field below, select the desired map viewer with which chromosomal bands are to be linked, banding resolution, color style, and the sequence of the chromosomes, then click "Draw". The CyDAS software will then compute an image map containing the ideograms of all derivative and non-derivative chromosomes of the karyotype (= "karyogram"), with links to the NCBI or Ensembl map viewer.

It is absolutely indispensable that **break points** are specified; denoting them at a lower resolution than the resolution for the image may yield inconsistencies. **Ring** chromosomes of defined band composition are shown **linearized**; marker chromosomes (linear or ring shaped) are not shown. Minor errors in the formula are automatically corrected.

Background information on [Known Problems](#) and the [technics of calculating a karyogram](#) are available in the documentation section.

An experimental page for [step by step development of a karyogram](#) is also available.

46<2n>,XX,der(18)t(10;18)(p13;q21.33)

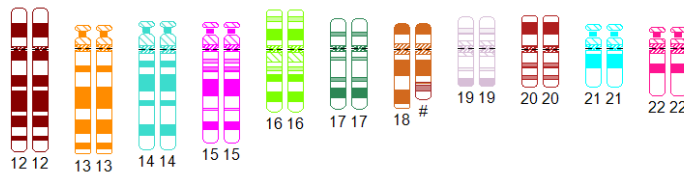
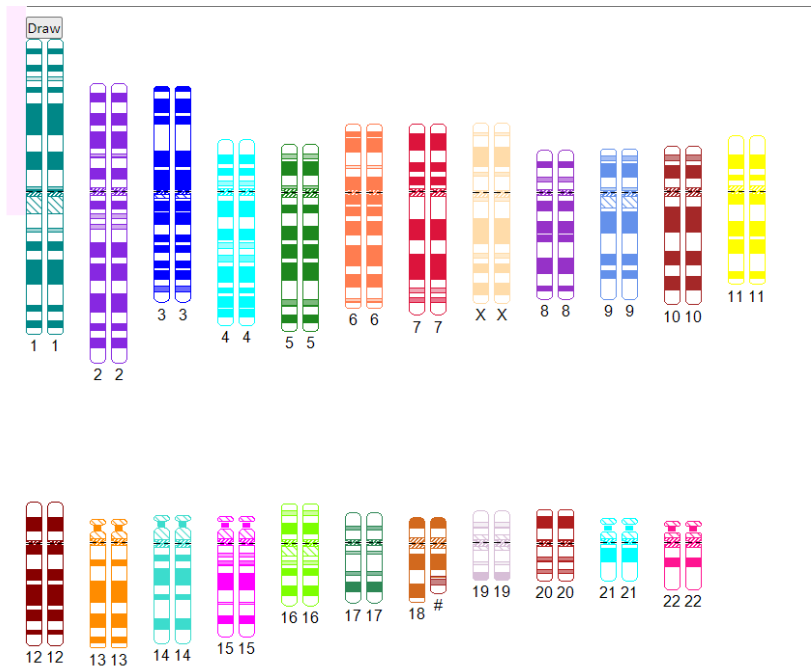
Link to MapViewer:  NCBI  Ensembl

Banding Resolution:  2 Digits  400 Bands  550 Bands  800 Bands

Color

- 2) The karyogram is displayed below. **Note:**The X chromosome is placed after chromosome 7 in the karyotype unless the drawing sequence is changed and a derivative chromosome is labeled with a # and not the chromosome number.

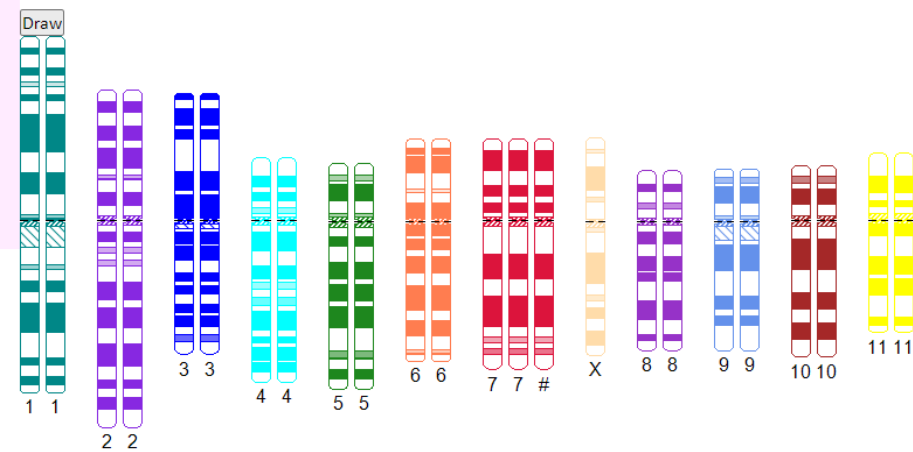
Before



denote a line break.

Drawing Sequence:

1,2,3,4,5,6,7,X,8,9,10,11,BR,12,13,14,15,16,17,18,19,20,21,22,Y,?



After



## For a Single Aberration - [Drawing Derivative Chromosomes Online](#)

- This resource provides you with a visual representation of structural rearrangements including translocations and derivative chromosomes. Banding resolutions included are for the 400, 550, and 850 band levels, this allows you to play around with different breakpoints.
- 1) Type in the nomenclature of the derivative chromosomes into the box and click on the Draw button.
  - 2) To change breakpoints, modify the nomenclature and hit Draw or Enter.

Before

### Drawing Derivative Chromosomes Online Deutsche Version

This software draws an image for one chromosomal rearrangement.

Enter the description of **ONE** rearrangement (in numbers: **1**; it is exactly 1, not 2, not 3!) giving raise to one or more derivative chromosome(s) in the text field below, select the desired map viewer with which chromosomal bands are to be linked, banding resolution and color style, then click "Draw". The CyDAS software will then compute an image map containing the ideogram(s) of the derivative chromosome, with links to the NCBI or Ensembl map viewer.

It is absolutely indispensable that **break points** are specified; denoting them at a lower resolution than the resolution for the image may yield inconsistencies. **Ring** chromosomes are shown **linearized**.

Hint: a **complete karyogram** can be drawn with the **example program #4**.

der(18)t(10;18)(p13;q2133)

Link to MapViewer:  NCBI  Ensembl

2 Digits  400 Bands  550 Bands  800 Bands

Color

Scale:

After

der(18)t(10;18)(p13;q21.33)


Link to MapViewer:  NCBI  Ensembl

2 Digits  400 Bands  550 Bands  800 Bands

Color

Scale:

Draw



#

Additional CyDas how-tos: [CyDAS: HowTos](#)

Citation: Hiller B, Bradtke J, Balz H and Rieder H (2004): "CyDAS Online Analysis Site", <http://www.cydas.org/OnlineAnalysis/>"

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**Last Updated:** March 31st, 2024

